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## **Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
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(54) Title: IMIDAZO-PYRIDAZINES, TRIAZOLO-PYRIDAZINES AND RELATED BENZODIAZEPINE RECEPTOR LIGANDS

$$Z_{2}$$

$$Z_{1}$$

$$Z_{4}$$

$$Z_{4}$$

$$R_{5}$$

$$R_{8}$$

$$R_{8}$$

$$R_{1}$$

$$R_{1}$$

$$R_{2}$$

$$R_{3}$$

$$R_{4}$$

$$R_{5}$$

$$R_{8}$$

$$R_{8}$$

$$R_{1}$$

(57) Abstract: Compounds of the Formula are provided, as are methods for their preparation. The variables  $Z_1$ ,  $Z_2$ ,  $R_3$ ,  $Z_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and Ar in the above formula are defined herein. Such compounds may be used to modulate ligand binding to  $GABA_A$  receptors in vivo or in vitro, and are particularly useful in the treatment of a variety of central nervous system (CNS) disorders in humans, domesticated companion animals and livestock animals. Compounds provided herein may be administered alone or in combination with one or more other CNS agents to potentiate the effects of the other CNS agent(s). Pharmaceutical compositions and methods for treating such disorders are provided, as are methods for using such ligands for detecting  $GABA_A$  receptors (e.g., receptor localization studies).



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